World Applied Sciences Journal 2014 vol.31 N2, pages 272-276

Friction surfaces modification using tribo-compounds

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Abstract

The current state of the issue of restoring the worn surfaces of the machines and mechanisms friction joints using the mineral tribo-compounds has been considered in the article. The explanation for the lack of the large-scale development of this activity area has been given. The results of studying the finely dispersed powders of the serpentine group minerals which form the basis of the friction geomodifiers (FGM) have been represented. The X-ray diffraction phase analysis has been conducted. The names of substances identified in the powders according to the International ICDD Spectra Library (USA) have been defined. On the basis of analysing the XRD patterns of the powders the conclusions have been made. The XRD fluorescence analysis of the element composition of the powders of eight serpentine group mineral types of the original serpentinite itself has been carried out. Out of many examined versions of the mechanism of forming the layers of high wear resistance and the low friction coefficient on the worn friction joint surfaces the main process factors have been identified. The own version of the mechanism of such coating formation has been expressed. © IDOSI Publications, 2014.

http://dx.doi.org/10.5829/idosi.wasj.2014.31.02.14293

Keywords

Diffraction pattern, Friction geomodifier, In-place repair, Modification, Phase composition, Pressure, Serpentine, Serpentinite, Spectrogram, Temperature, Tribo-compound, Tribo-plazma, Wear resistance